WHAT IS CLAIMED IS:

1.   An ink-jet printing method of printing on a printing medium by discharging ink from a printhead constituted by arraying a plurality of printing nozzle

5   arrays each formed by a plurality of printing nozzles for discharging ink, comprising:

a generation step of generating printing data to be printed by each of at least first and second adjacent printing nozzle arrays out of the plurality of

10   printing nozzle arrays on the basis of tone information of image data to be printed; and

a printing step of printing by discharging ink to a pixel of the printing medium from the first and second printing nozzle arrays on the basis of the

15   printing data generated in the generation step,

wherein in the generation step, printing data corresponding to each of the first and second printing nozzle arrays is generated in a range in which a sum of the number of dots to be printed by the first printing

20   nozzle array and the number of dots to be printed by the second printing nozzle array does not exceed a predetermined number.

2.   The method according to claim 1, wherein the predetermined number includes a maximum number of

25   printing dots with which influence of an air flow generated along with ink discharge from the first and second printing nozzle arrays is admissible.

3.   The method according to claim 1, wherein the first and second printing nozzle arrays are arranged via a common ink chamber.

4.   The method according to claim 1, wherein in the generation step, printing data corresponding to each of the first and second printing nozzle arrays is so generated as to relatively decrease the number of printing dots by the second printing nozzle array as the number of printing dots by the first printing nozzle array relatively increases.

5.   An ink-jet printing method of printing on a printing medium by discharging ink from a printhead constituted by arraying a plurality of printing nozzle arrays each formed by a plurality of printing nozzles for discharging ink, comprising:

       a generation step of generating printing data to be printed by each of at least first and second adjacent printing nozzle arrays out of the plurality of printing nozzle arrays; and

       a printing step of printing by discharging ink to a predetermined region of the printing medium from the first and second printing nozzle arrays on the basis of the printing data generated in the generation step,

       wherein in the generation step, printing data to be printed in the predetermined region by each of the first and second printing nozzle arrays is so generated as to suppress a sum of a printing ratio of printing by

the first printing nozzle array and a printing ratio of
printing by the second printing nozzle array to be not
more than a predetermined ratio.

6.   An ink-jet printing method of printing on a
5   printing medium by discharging ink from a printhead
constituted by arraying a plurality of printing nozzle
arrays each formed by a plurality of printing nozzles
for discharging ink, comprising:

a generation step of generating printing data to
10   be printed by each of at least first and second
adjacent printing nozzle arrays out of the plurality of
printing nozzle arrays; and

a printing step of printing by discharging ink to
a predetermined region of the printing medium from the
15   first and second printing nozzle arrays on the basis of
the printing data generated in the generation step,

wherein in the generation step, printing data to
be printed in the predetermined region by each of the
first and second printing nozzle arrays is generated in
20   a range in which influence of an air flow generated
along with ink discharge from the first and second
printing nozzle arrays is admissible.

7.   The method according to claim 6, wherein the
admissible range includes a range in which a shift
25   amount from an ideal landing position of a dot is less
than half of a dot diameter regardless of the influence
of an air flow.

8.   An ink-jet printing apparatus which prints on a
printing medium by discharging ink from a printhead
constituted by arraying a plurality of ink discharge
printing nozzle arrays, comprising:

5   generation means for generating printing data to
be printed by each of at least first and second
adjacent printing nozzle arrays out of the plurality of
printing nozzle arrays on the basis of tone information
of image data to be printed; and

10   control means for controlling printing by the
first and second printing nozzle arrays on the basis of
the printing data generated by said generation means,

          wherein said generation means generates printing
data corresponding to each of the first and second

15   printing nozzle arrays in a range in which a sum of the
number of dots to be printed by the first printing
nozzle array and the number of dots to be printed by
the second printing nozzle array does not exceed a
predetermined number.

20   9.   The apparatus according to claim 8, wherein the
predetermined number includes a maximum number of
printing dots with which influence of an air flow
generated along with ink discharge from the first and
second printing nozzle arrays is admissible.

25   10.   The apparatus according to claim 8, wherein the
first and second printing nozzle arrays are arranged
via a common ink chamber.

11.　The apparatus according to claim 8, wherein a first ink amount discharged from the first printing nozzle array by one discharge is different from a second ink amount discharged from the second printing

5　nozzle array by one discharge.

12.　The apparatus according to claim 11, wherein the first ink amount discharged from the first printing nozzle array by one discharge is larger than the second ink amount discharged from the second printing nozzle

10　array by one discharge.

13.　The apparatus according to claim 8, wherein a first printing ratio by the first printing nozzle array is higher than a second printing ratio by the second printing nozzle array.

15　14.　The apparatus according to claim 8, wherein said generation means independently generates printing data corresponding to the first and second printing nozzle arrays.

15.　The apparatus according to claim 8, wherein index

20　processing of converting one printing data generated on the basis of the image data to be printed into printing data for the plurality of printing nozzle arrays is performed.

16.　The apparatus according to claim 13, wherein the

25　first and second printing ratios are set different from each other in each printing mode.

17.　The apparatus according to claim 8, wherein the

first and second printing nozzle arrays discharge the same type of ink.

18.   The apparatus according to claim 8, wherein the first and second printing nozzle arrays discharge

5   different types of inks.

19.   An ink-jet printing apparatus which prints on a printing medium by discharging ink from a printhead constituted by arraying a plurality of printing nozzle arrays each formed by a plurality of printing nozzles

10   for discharging ink, comprising:

generation means for generating printing data to be printed by each of at least first and second adjacent printing nozzle arrays out of the plurality of printing nozzle arrays; and

15   printing control means for printing by discharging ink to a predetermined region of the printing medium from the first and second printing nozzle arrays on the basis of the printing data generated by said generation means,

20   wherein said generation means generates printing data to be printed in the predetermined region by each of the first and second printing nozzle arrays in a range in which influence of an air flow generated along with ink discharge from the first and second printing

25   nozzle arrays is admissible.

20.   The apparatus according to claim 19, wherein the admissible range includes a range in which a shift

amount from an ideal landing position of a dot is less than half of a dot diameter regardless of the influence of an air flow.

21. A program which controls an ink-jet printing
5 apparatus which prints on a printing medium by discharging ink from a printhead constituted by arraying a plurality of ink discharge printing nozzle arrays, comprising:

a program code for a generation step of
10 generating printing data to be printed by each of at least first and second adjacent printing nozzle arrays out of the plurality of printing nozzle arrays on the basis of tone information of image data to be printed,

wherein in the program code for the generation
15 step, printing data to be printed in a pixel by each of the first and second printing nozzle arrays is generated in a range in which a sum of the number of dots to be printed by the first printing nozzle array and the number of dots to be printed by the second
20 printing nozzle array does not exceed a predetermined number.

22. The program according to claim 21, wherein the program runs in a host apparatus which supplies printing data to the ink-jet printing apparatus.

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